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PATENT SPECIFICATION

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191,402

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COMPLETE SPECIFICATION.

Improvements in Signalling Apparatus.

I, Archibald Montgomery Low, Captain in His Majesty's Army, of Royal Flying Corps Experimental Works, Feltham, Middlesex, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to signalling apparatus of the kind in which signals may be transmitted from a sending station to a number of receiving stations in such a manner that only one of the receiving stations is able to receive the signals at any one time.

In apparatus of this kind it has hitherto been proposed to employ clockwork or similar mechanisms in conjunction with electric bell or like signals, the clockwork being adapted to actuate means for rendering the signals singly and consecutively operative.

It has also been proposed in connection with telephone and like systems to provide a clock or the like having upon its dial a commutator ring or rings adapted by the rotation of the hands of the clock to direct the current into various circuits for the purpose of placing a number of subscribers consecutively in communication with a central station.

According to the present invention which is particularly applicable to radiographic signalling I provide a number of watches or clocks working in synchronism, one watch or the like being situated at the sending station and one at each of the receiving stations.

In conjunction with the watch or clocks I provide a series of cams adapted to be actuated thereby in order to close successively a number of circuits, the cams being so shaped that only one of such circuits is closed at any given instant. It is clear that if these circuits be made parts of the receiving circuits only one receiving apparatus is operative at a time and consequently signals may be sent to the corresponding receiving station without being picked up at any one of the other stations.

One convenient form of the invention is illustrated in the accompanying drawings in which:—

Fig. 1 is a plan of the apparatus and

Fig. 2 is a plan, to an enlarged scale, of the mechanism for closing the circuits.

Each of the watches or clocks 5 above referred to is mounted in a suitable case 6 and has a centre seconds pinion to which is secured a pointer 7 moving over a dial 8. This dial is divided into the required number of equal sectors by the marks 1, 2, 3, 4, four such sectors being shown in the drawing. Mounted around the dial 8 are a number of pairs of studs 9, 10, 11, 12, of suitable conducting material, the outer stud of each pair being secured to a ring 13, of vulcanite or other suitable insulating material, and the inner studs being secured to a disc 14 of brass or other suitable conducting material. Each of the outer studs is connected to one of the terminals 15, 16, 17, 18, and the disc 14 is connected to the central terminal 19, as clearly shown in Fig. 2. The means for closing the circuits successively comprise a number of shoes or the like 20 pivoted in arms 21 which are pivoted at 22 and have extensions 23 in which are pivoted ruby or like rollers 24. These rollers rest on the face of the cam pinion 25 and are maintained in contact therewith by the springs 26. It is clear that as the cam pinion 25 rotates the rollers 24 are successively lifted and the corresponding shoes 20 are moved to close the circuits. Thus, when the pointer 7 is in the sector 1—2 the circuit 15—9—19 is closed, in the sector 2—3 the circuit 16—10—19 is closed and so on.

The arm 27 is for starting and stopping the watch movement, the arm 28 is for stopping the movement and returning the pointer 7 to its starting position and the arm 29 is for winding.

In using the apparatus, one watch is provided at the sending station and one at each of the receiving stations, these watches having previously been so regulated and set as to be in exact synchronism. The watches at the receiving stations are connected up in the receiving circuits, connection being made to terminals 15 and 19 at No. 1 station, terminals 16, 19 at No. 2 station and so on. The operator sending signals then knows that when the pointer on his watch is in the sector 1—2 he can communicate with No. 1 station; when in the sector 2—3 with No. 2 station and so on.

In a modified form, instead of providing each of the watches or clocks with a number of pairs of contact studs as above described, each of the watches may be provided with only one pair of studs, these studs being so disposed in relation to each other on the several watches that when one of the circuits is closed the others are open. The mode of operating in this case is exactly as above described.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—

1. Signalling apparatus of the kind referred to comprising a number of watches or clocks working in synchronism and cams operated by said watches or clocks adapted successively to close a number of circuits, substantially as described.

2. Signalling apparatus as claimed in Claim 1 in which each watch or the like is provided with a number of pairs of contacts normally insulated from each other but adapted to be connected together to close the corresponding circuits by a shoe or the like operated by the watch or clock movement, substantially as described.

3. Signalling apparatus as claimed in Claims 1 and 2 so constructed and arranged that when one of the receiving circuits is closed the others are open, substantially as described.

4. Apparatus as claimed in Claim 1 in which each watch or the like is provided with a single pair of contact studs adapted to be connected together to close the receiving circuit, the studs being so disposed in relation to each other upon the several watches or the like that only one of the receiving circuits is closed at any one time, substantially as described.

5. Signalling apparatus constructed, arranged and operating substantially in the manner hereinbefore described and as illustrated by the accompanying drawings.

Dated this 1st day of June, 1917.

MARKS & CLERK.

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[This Drawing is a reproduction of the Original on a reduced scale]

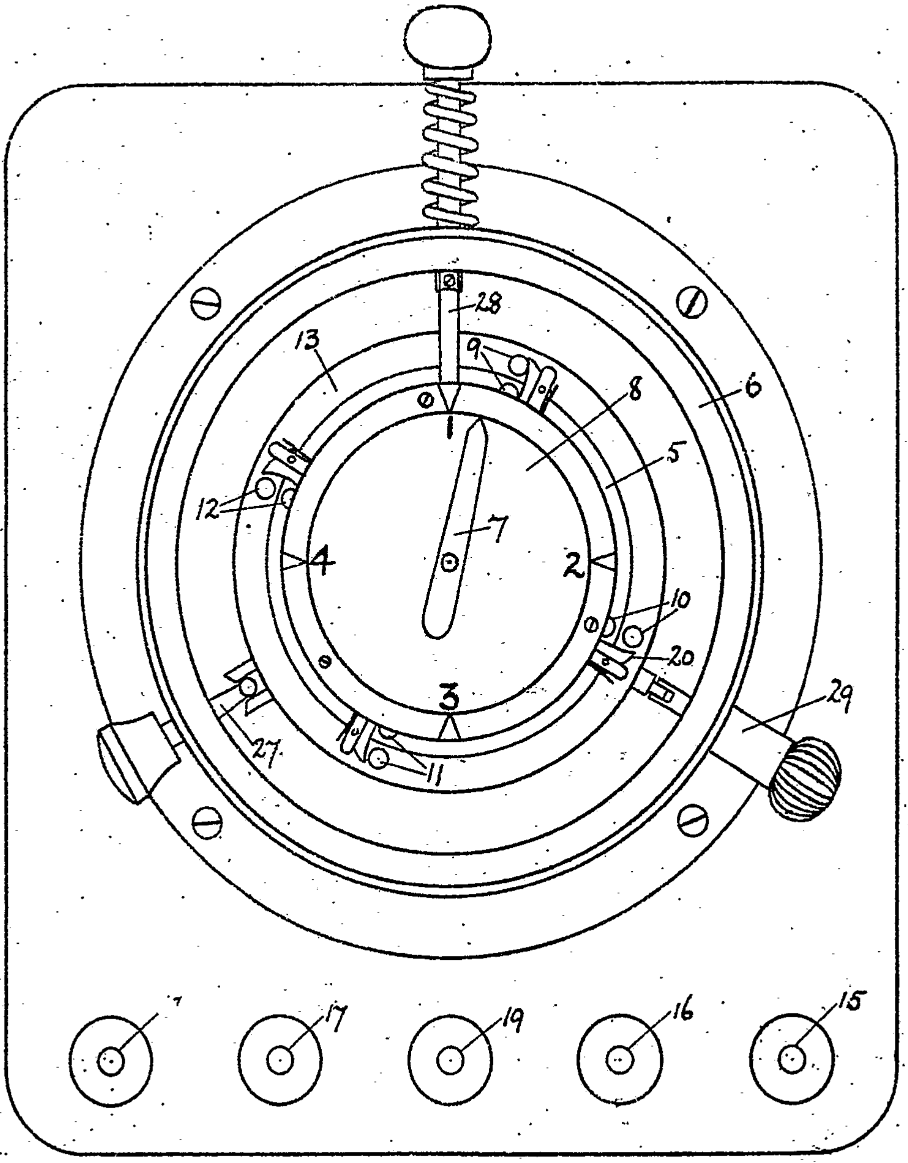

FIG. I

2 SHEETS

SHEET 1

SHEET 2

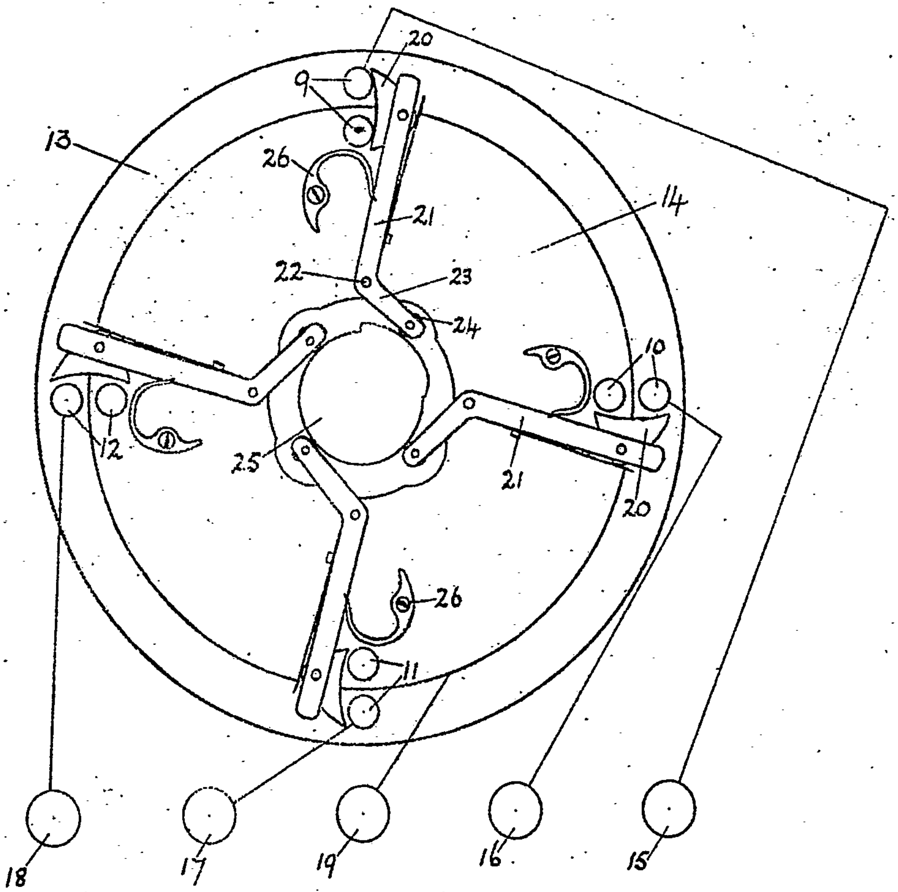

FIG. 2

Malby&Sons, Photo-Litho

[This Drawing is a reproduction of the Original on a reduced scale]

SHEET 1

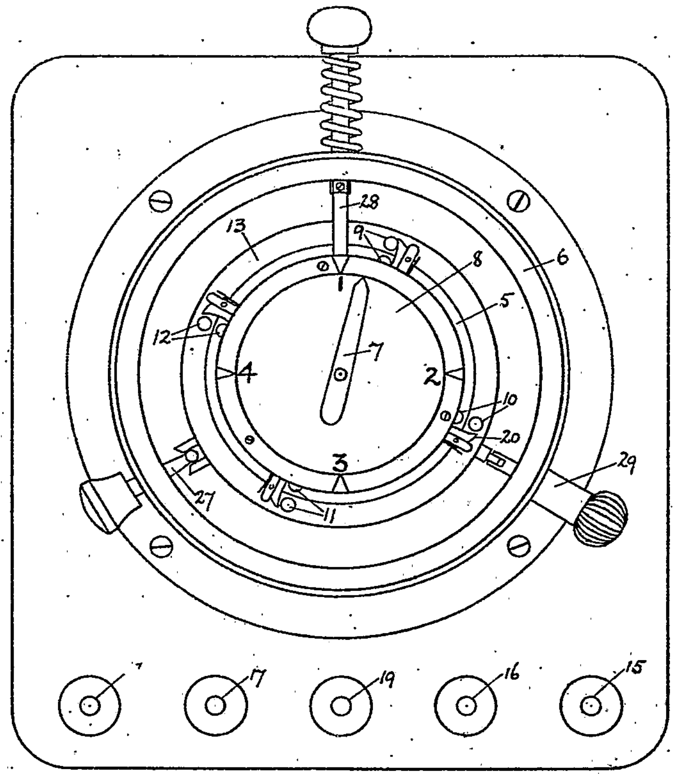

FIG. 1

SHEET 2

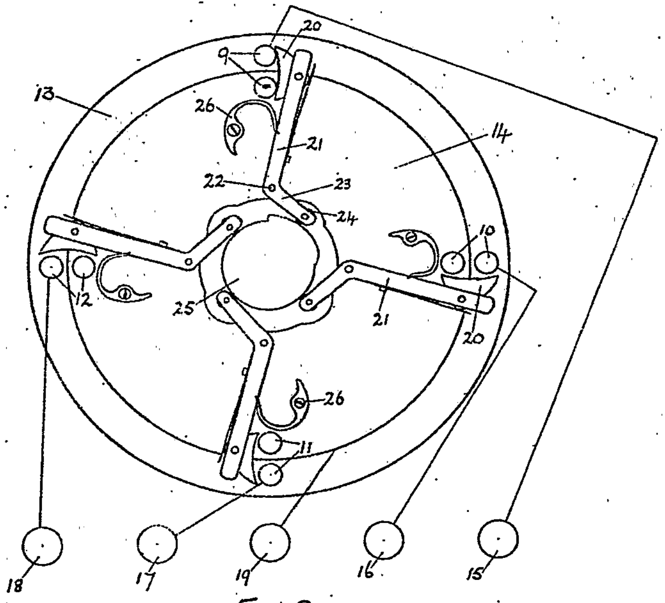

FIG. 2

Malby&Sons, Photo-Litho